

REMARKS

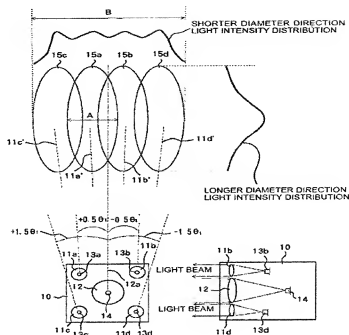
Applicant respectfully requests reconsideration of this application in view of the foregoing amendment and following remarks.

Status of the Claims

Claims 1, 2 and 4-7 are pending in this application, and stand rejected. Claim 1 is amended.

Claim 1 is amended to recite that the generally elliptical irradiation pattern is formed on “a light-receiving unit” of the other apparatus “having a shorter diameter direction and a longer diameter direction. Claim 1 is further amended to recite that the light-emitting units are set to adjust “an overlapping degree” of the irradiation patterns so that the optical axes of the light-emitting units are inclined “with different angles each other” and a width of a combined irradiation pattern is 1.5 times or larger than a width of the irradiation pattern “formed by one light-emitting unit in the shorter diameter direction at the light-receiving unit of the other apparatus.”

Support for these claim amendments is found throughout the application as originally filed, including for example Figure 2 and its associated text (e.g., paragraphs [0033] through [0036] of the corresponding published application (i.e., Pub. No. 2004/0042717)).



Referring to Fig. 2 of the present application as shown above, the transmission optical systems 11a-11d “adjusts” the light emitting units so that the respective optical axes 11a’, 11b’, 11c’ and 11d’ are “inclined” with different angles each other (e.g., $\pm 0.5\theta$ and $\pm 1.5\theta$) with respect to the reference axis 12a so that the width of a combined irradiation pattern formed by combining the light beams (indicated as symbol “B”) is 1.5 times or larger than the width of the irradiation pattern formed by a single light-emitting unit (indicated as symbol “A”) in the shorter diameter direction at the light-receiving unit of the other apparatus. Applicant notes that “Fig. 2 shows a front view and a side view showing the structure of the free space optics communication apparatus of Embodiment 1, and beam irradiation patterns at a light-receiving unit of the other apparatus.” (emphasis added).

No new matter has been added by this amendment.

Rejection under 35 U.S.C. §103

Claims 1, 2 and 4-7 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Pat. No. 5,777,768 to Korevaar ("Korevaar"). Applicants respectfully request reconsideration and withdrawal of that because Korevaar fails to teach, disclose and suggest each of Applicants' claim elements.

Korevaar is directed to a multiple transmitter laser link. Figures 5A (reproduced below) and 5B are side cut away and front views of an optical configuration for a laser communication terminal (12, 14), wherein the laser beams (20) are transmitted from the terminal along substantially the same path as the incoming light from the other terminal.

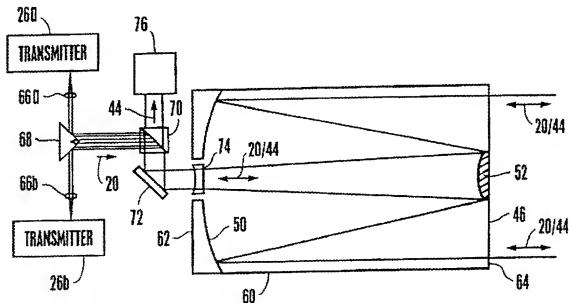


Fig. 5A

Specifically, the laser beams (20) use the same telescope base (60) and are combined spatially at the back (62) of the telescope (60) so that they emanate from different separated spatial positions at the front (64) of the telescope (60). This is said to produce laser beams (20)

that are collimated by respective focusing optics (66a and 66b) and may be combined together using a spatial combining prism (68). All of the combined transmitted laser beams (20) are then combined into the telescope beam path using transmit/receive beam splitter (70).

The *Response to Arguments* section of the Office Action refers to Figs. 5A and 5B and argued that “beams 78a and 78b” inherently meet various claim elements:

“Therefore, further away from the original transmission location, the pair of beams 78a and 78b disclosed by Korevaar diverge and inherently would comprise elliptical irradiation patterns that grow toward each other and eventually overlap ‘in the shorter diameter direction’ of the elliptical shapes Fig. 5A shows light-emitting units 26a and 26b having optical axes that are ‘inclined’ with respect to a reference axis of the communication apparatus, at least in the sense that the optical axis of the light emitting units are inclined 90 degrees relative to a reference axis comprising the direction of light output from the apparatus shown in Figure 5A as a whole.” [page 6 of the Office Action]

With regard to “beams 78a and 78b,” these are shown in Korevaar’s Figure 5B (below) and described as “beam locations 78 at the front of the eight inch telescope aperture 46”:

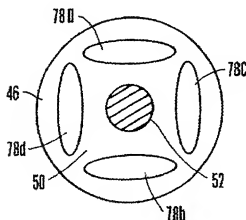


Fig. 5B

Korevaar's Fig. 5b beam locations (78a and 78b) do not diverge or overlap; they are spatially distinct. While the light beams theoretically might diverge and eventually overlap at some point, there is simply no teaching in Korevaar that the transmission optical systems are adjusted in such a way that the respective optical axes of the light emitting units are inclined with different angles each other with respect to the reference axis as recited by claim 1. Moreover, Korevaar further fails to teach that the width of the combined irradiation pattern is 1.5 times or larger than the width of the irradiation pattern formed by a single light-emitting unit in the shorter diameter direction at the light-receiving unit of the other apparatus, as also recited in claim 1.

Accordingly, claim 1 is believed to be patentable over Korevaar. Dependent claims 2 and 4-7 also are asserted to be condition for allowance for at least similar reasons.

Applicant has chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Likewise, Applicant has chosen not to submit evidence to traverse the rejection at this time. Applicant, however, reserves the right, as provided by 37 C.F.R. §§ 1.131 and 1.132, to do so in the future as appropriate. Finally, Applicant has not specifically addressed the rejections of the dependent claims. Applicant respectfully submits that the independent claims, from which they depend, are in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicant, however, reserves the right to address such rejections of the dependent claims in the future as appropriate.

CONCLUSION

This application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is requested. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 1232-5123.

Respectfully submitted,
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